

What is claimed is:

1. An apparatus for pulling a single crystal, which has a lifting means of a crucible and a level position controlling means to control the level position in the crucible by calculating a crucible ascent speed based on a decrease in volume of a melt with pulling a single crystal to control the lifting means, comprising:

a reference reflector arranged inside an apparatus body;

a level position measuring means to measure an actual level position by detecting a mirror image position of the reference reflector reflected in the melt surface using an optical device arranged outside the apparatus body;

a crucible ascent speed adjustment value calculating means to calculate an adjustment value of the crucible ascent speed based on an output from the level position measuring means;

an adjustment value adding means to add the adjustment value to the crucible ascent speed; and

the level position controlling means to control the level position in the crucible by controlling the lifting means based on an output from the adjustment value adding means to control the crucible ascent speed.

2. An apparatus for pulling a single crystal according to Claim 1, comprising an adjustment value addition propriety judging means to judge the propriety of adding the adjustment value to the crucible ascent speed, based on a diameter of a pulling crystal, a level position measured by the level position measuring means, a distance between the crystal and the reference reflector, and a crucible rotational speed.

3. An apparatus for pulling a single crystal according to Claim 1 or 2, comprising an averaging means to average level positions measured by the level position measuring means.

4. An apparatus for pulling a single crystal according to Claim 1, wherein the optical device constituting the level position measuring means is also used as an optical device for measuring a crystal diameter.

5. An apparatus for pulling a single crystal according to Claim 1, comprising an automatic updating means to automatically work out a conversion equation for

converting a mirror image position of the reference reflector on the melt surface to an actual level position by automatically moving the crucible up and down from the initial position to obtain the relationship between the mirror image position of the reference reflector on the melt surface and the level position, and making the relationship approximate to a straight line.